

Notice of Allowability

Application No.

10/537,806

Applicant(s)

BOPP ET AL.

Examiner

Nguyen Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/23/07.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


BAO Q. VU
PRIMARY EXAMINER

DETAILED ACTION

Response to Amendment

The amendment filed on 08/23/07 were entered. Independent and dependent claims 1-10 were amended.

Allowable Subject Matter

Claims 1-10 are allowed.

The following is an examiner's statement of reasons for allowance: None of the prior art alone or in combination disclose the a method for predicting the voltage of a battery, having the following steps: (Step 1) detection determining and checking battery data, by detection and calculation devices, with the battery data comprising a battery voltage (U_{batt}), a battery current (I_{batt}), a battery temperature (T_{batt}) and a dynamic internal resistance (R_{di}), (Step 2) checking whether the present functional procedure is a first procedure, (Step 3) if the result in step 2 is that a functional procedure has already been carried out, checking whether a predetermined time (T_x) has elapsed, and, if the predetermined time has not yet elapsed, returning to step 1, (S4) if the predetermined time (T_x) has elapsed, filtering of the battery voltage (U_{batt}) and of the battery current (I_{batt}) by means of using a low-pass filter, and emission of a filtered battery voltage (U_{filt}) and of a filtered battery current (I_{filt}), (Step 5) checking whether the filtered battery current (I_{filt}) is greater than a predetermined load (I_{pred}) minus a tolerance (Tol), and whether the battery current (I_{batt}) is greater than a predetermined load current (I_{pred}) minus the tolerance (Tol) and, if the conditions are not satisfied, returning to step 1, (Step 6) calculation of a resistive voltage drop (U_{ri}) across the dynamic internal resistance (R_{di}), (Step 7) calculation of a polarization voltage (U_{pol}) as a function of the

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filtered battery current (I_{batt_filt}), (S8) filtering of the polarization voltage (U_{pol}), using two low-pass filters separately on the basis of a fast settling component ($U_{pol_fast_raw}$) and a slowly settling component ($U_{pol_slow_raw}$) and emission of a filtered polarization voltage (U_{pol_filt}), (Step 9) calculation of a predicted battery voltage by subtracting the resistive voltage drop (U_{ri}) and the filtered polarization voltage (U_{pol_filt}) from the filtered battery voltage (U_{batt_filt}), (Step 10) limiting of the predicted battery voltage (U_{pred}) determined in step S9 upwards and downwards, (Step 11) filtering of the predicted battery voltage (U_{pred}), and (Step 12) checking whether the a bit which indicates that a first function call has been carried out is set and, if not, setting the bit and returning to step 1, or, if yes, returning to step 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Tran whose telephone number is 571-270-1269. The examiner can normally be reached on M-F 7:30-5:00, OFF every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NT



BAO Q. VU
PRIMARY EXAMINER